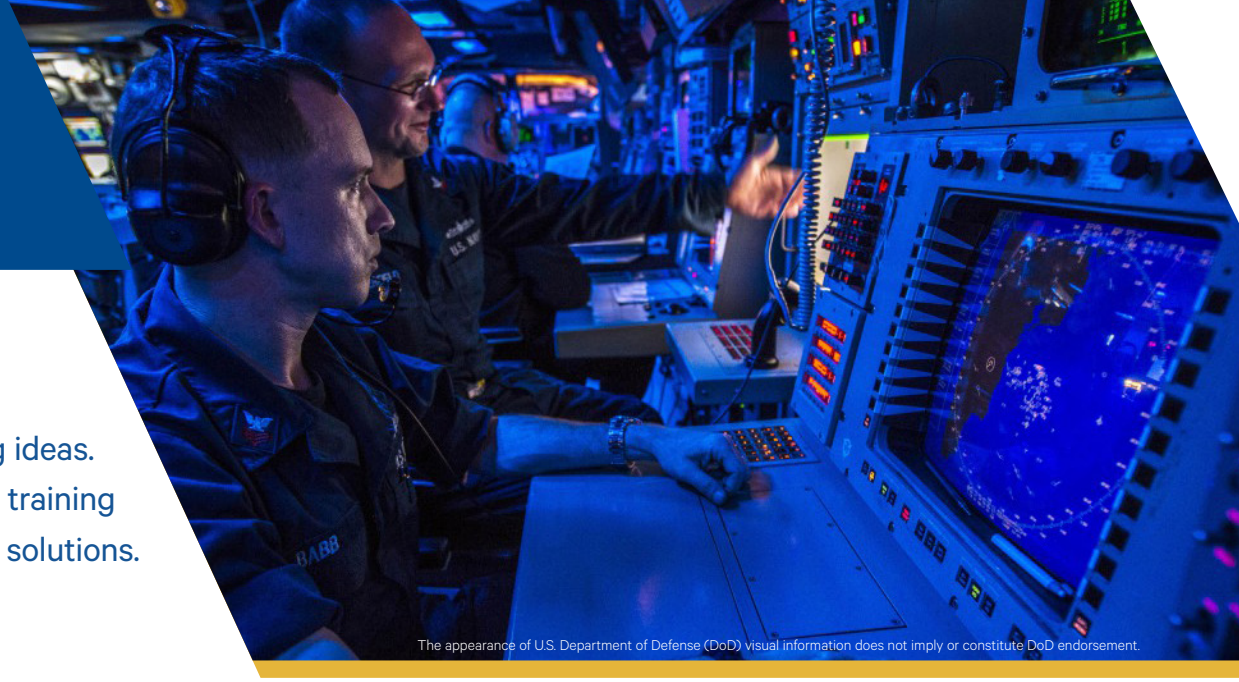
Huntington Ingalls Industries

Hard Stuff Done Right™



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Big ideas.
Real training
solutions.

JOINT SIMULATION BUS INTEROPERABILITY ENABLER

KEY FACTS

Integrates 300+ LVC systems

One architecture reduces translation, translators and complexity

System and software architecture framework for rapid integration

AT A GLANCE

Integrating architecture is critical to connecting varied applications and systems into a cohesive, functioning, and integrated training environment. For integrated training to function properly, these gateways must do more than connect; they must translate data between various models and protocols, so it can flow unhindered throughout the system in real time.

Our Joint Simulation BUS (JBUS) tool reduces the effort and risk associated with gateway development by providing a common framework for data translation. This framework decreases the number of specialized translation systems and the number of operators or developers required to monitor and maintain software for training event execution.

Valuable for both newly developed and legacy trainers, the framework delivers a system and software architecture capable of rapidly integrating, configuring, controlling, and monitoring execution of new and existing modules. JBUS allows users to integrate all live, virtual, and constructive (LVC) simulations and simulators — along with real-world Command, Control Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems — into a single training environment.

LVC TRAINING USE CASE EXAMPLES:

C4ISR	DATA MODEL INTERFACE
VIRTUAL TRAINER INTERFACES	CROSS DOMAIN SOLUTION BOUNDARIES:
FEDERATION BRIDGES	LIVE RANGE TRANSLATION

PRODUCT OVERVIEW

JBUS provides a plugin framework to promote interoperability, reuse of interface components, and modular protocol translation. The philosophy behind JBUS is to provide "protocol independence" between plugins. With this philosophy, a plugin is only programmed to translate between its specific protocol(s) and the internal JBUS data representation. JBUS supports protocol and application plugins of varying size and complexity, while reducing design, implementation, and maintenance effort. It also supports filters and manipulators that can be applied to any plugin. Built on an extensible, open architecture, this low-cost, easy-to-use solution meets current and emerging architectural needs, with fast integration and configuration into new environments. Through JBUS, we help clients reduce training costs and effort while rapidly deploying new data translation capabilities.

CENTRALIZED MONITORING AND CONTROL

- Capacity to run hundreds of JBUS instances across an enterprise
- Remote authenticated administration
- Provides web-based distributed technical operations and support for integrators, operators, and engineers to manage, oversee, and troubleshoot training events

SEAMLESS INTEROPERABILITY

- Standard configuration to connect140-150 ships, shore nodes, and more training sites, live ranges, etc.
- Voice, Link 16, or simulation traffic integrated into one cohesive exercise that unites training events around the world

EXTENSIBLE

- Easily extensible plug-in framework allows integration of new systems with minimal development, saving time and money.
- Many-to-many translation capability
- Data filtering and manipulation capability

HIGH PERFORMANCE

- Real-time translation tested at 750,000+ entities
- Tested and proven in existing integrated training programs, from operational training to certification
- Scales by being able to use multiple JBUS simultaneously to segment the work load
- Integrates live, virtual, and constructive training modalities

EXAMPLES OF JBUS TRANSLATION CAPABILITIES

- High Level Architecture (HLA 1.3, 1516e)
- Virtual interface connects air trainers, surface vessels, and operations centers
- Integrates Joint and Coalition partner systems
- METOC interface
- Distributed Interactive Simulation (DIS v4, 5, 6)
- Test and Training Enabling Architecture (TENA)
- Various C4ISR protocols, including VMF, USMTF, OTHGold, and Tactical Digital Information Links (TADIL)
- Cyber effects

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About Huntington Ingalls Industries, Technical Solutions:
Building on a legacy of more than a century of naval shipbuilding, Huntington Ingalls Industries' Technical Solutions division provides mission-critical national security solutions to a wide variety of government and commercial customers worldwide. Comprising more than 7,000 professionals worldwide, our unique national security services portfolio includes unmanned systems, nuclear and environmental services, intelligence, surveillance and reconnaissance (ISR), cyber and electronic warfare, live, virtual and constructive (LVC) training solutions, and fleet sustainment and logistics. For more information, visit tsd.huntingtoningalls.com.

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